UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
CAL WAYNE HUU

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Docketing.US@motorola.com

ADVISORY ACTION

Response to Arguments

Applicant's arguments filed April 6, 2009 have been fully considered but they are not persuasive.

1.   The Applicant argues that since the combination is of "coding schemes", at least two coding schemes have to be combined to have a current data rate. Hsu does not teach the combining of two or more coding schemes to transmit a set of data at a current data rate. Hsu chooses one coding scheme for each transmission of a set of data. The Examiner disagrees.

The Examiner first notes about his interpretation regarding claims:

One skilled in the art would be able to recognize that in a cellular network, in order to transmit data on the forward channel, the system measures performance of at least one link, determine, and select at least one of modulation (e.g., BPSK, QSPK, M-PSK, M-QAM, 16-QAM, 8-PSK, etc…) scheme and at least one of coding scheme (e.g., FEC, AMR-WD, EVRC-WB, etc.) with a proper coding rate so that data packets could be encoded and transmitted. It is also important to note that cellular networks support multiple modulation schemes and coding schemes.

Because the network supports a plurality of modulation schemes, and a plurality of coding schemes; at any time, <u>one particular modulation scheme is selected in</u> <u>**combination** with one coding scheme so that this selected combination could achieve a</u> <u>particular data rate and/or optimize the data throughput</u>; then, this teaching would read

on "using a current combination of coding schemes that have a current data rate" of

claimed limitation. The **"combination of coding schemes"** is broadly and reasonably

interpreted as the joining together between any one of modulation schemes and any

one of coding schemes. For example, the first modulation scheme is combined with the

first coding scheme, or the first modulation scheme is combined with the second coding

scheme, etc. Note: any combination, coupling between modulation scheme and coding

scheme is <u>the combination of coding scheme of claimed limitation.</u>

      In view of Hsu, paragraph 0011 is reproduced below for convenience:

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[0011] A process for controlling selection of a modulation and
coding selection method to be used by a base transceiver station
to transmit data packets over a forward shared channel to a
mobile station in accordance with the invention includes storing
information at the base transceiver station, the information
containing selections of modulation and coding selection methods
which may be selected to transmit data packets over the forward
shared channel to the mobile station; receiving from the mobile
station at the base transceiver station a quality indication of
transmission of data packets over the forward channel to the
base station; and selecting a modulation and coding selection
method from a plurality of modulation and coding selection
methods which may be used to transmit data packets on the
forward channel dependent upon the received quality indication.
The information may correlate modulation and coding selection
methods with frame error rate and throughput determined by the
mobile station. Selection of one of the modulation and coding
selection methods may optimize transmission of the data packets.
The quality indication of transmission may be a ratio of Ec
(pilot channel strength) to Nt (noise from other cells). The
quality indication of transmission may be a function of frame
error rate or a function of throughput which functions may be
calculated by the mobile station over a plurality of data
transmissions over the forward channel from the base transceiver
station to the mobile station. The quality indication of
transmission of data packets may contain a trigger that either
frame error rate information or the throughput information is to
be used in selecting a modulation and coding selection method
and an indication of pilot signal strength and the pilot signal
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strength may be used in the selection of a modulation and coding selection method based upon either the designated frame error rate information or the designated throughput information. The trigger in the quality indication of transmission of data packets to use the frame error rate information may occur when the data packets received on the forward channel are determined by the mobile station to be sensitive to frame error rate. The trigger in the quality indication of transmission of the data packets to use the throughput information may occur when the data received on the forward shared channel are determined by the mobile station to be sensitive to throughput. The receiving of the quality indication at the base station may be over a reverse channel and the stored information may be stored in two tables. The reverse channel may be R-QUIECH or RCQICH.

Based on the passage above, it should be clear to the Applicant that Hsu clearly teaches or suggests "using a current combination of coding schemes that have a current data rate" because Hsu specifically teaches or suggests using at least one of modulation scheme in combination with one coding scheme to achieve a particular data rate or throughput.

2. The Applicant secondly argues that the Office action cites no authority for the definition of "duty cycle" that is presented, and the definition does not seem to make sense since it would result in a quantity of time (e.g., seconds). The Examiner respectfully disagrees.

The Examiner notes that if the Applicant states that the Examiner's definition does not make sense, **then what exactly is the Applicant's definition of "duty cycle"?** The Applicant is reminded that it is the Examiner's position to give the broadest reasonable interpretation of claim language. Therefore, the phrase "duty

cycle", by its plain meaning, is interpreted as a period or time the system, component, or in this case the coding scheme is active or operated. For example, when the particular coding scheme is selected for a period of time to process and/or encode data packets under a certain condition, then the time it takes for this particular coding scheme to operate is known as the "duty cycle".

It is important to note that even though the Applicant argues that the Examiner's definition does not make sense; nevertheless, the Applicant does not provide the Examiner an alternative definition or rationale as to why the Examiner's definition does not make sense rather than merely asserting that the Examiner's definition results in a quantity of time (e.g., seconds). In response to this Office Action, the Examiner would like to know in the Applicant's opinion, why the result in quantity of time would not make sense to define the phrase "duty cycle"? It is reasonable to consider the "duty cycle" is 0% if the system, component does not operate anything at all for a period of time, 100% if it operates the entire defined period, or anywhere in between.

Based on this discussion, it should be clear to both the Applicant and one skilled in the art that Hsu implicitly teaches or suggests "duty cycle" because Hsu teaches or suggests selecting a modulation scheme and coding scheme (i.e., a combination of coding scheme) so that data packets could be processed or encoded.

3.   With respect to claim 19, the Applicant asserts that the office action does not quote the new aspect added to claim 19 dated 10/27/2008 ("wherein the optimal combination of coding schemes includes more than one coding scheme, each having a

duty cycle") The Examiner apologizes for this typographical errors. As argued by the

Applicant, Lim does not discuss or imply using a combination of coding schemes, each

having a duty cycle. However, based upon the detailed rejections dated 02/05/2009

with respect to the teachings of Hsu and this response, it should be apparent to the

Applicant Hsu teaches or suggests "using a combination of coding schemes, each

having a duty cycle". In addition, Hsu specifically teaches or suggests at paragraph

0011 that "the selection one of the modulation and coding selection methods may

optimize transmission of the data packets". This teaching clearly reads on claimed

limitation. Furthermore, even if the Applicant does not satisfy with Hsu's teaching, then

one skilled in the art would conceptualize that when selecting a modulation scheme and

coding scheme (i.e., combination of coding schemes), then the system would

presumably select the "best" or "optimal" modulation and coding scheme for operation,

or at least "try" to select the "optimal" combination of coding scheme for operation. It is

illogical and/or bad design to simply select one of the "worst" or least effective

combination of coding scheme for operation. Hence, this feature in itself is understood

by one skilled in the art, let alone Hsu expressly suggests that selecting one of the

modulation and coding selection methods may optimize transmission of the data

packets.

All other claims are also rejected at least for the same reasons set forth above,

and based upon the foregoing discussion, previous rejections were proper and

therefore, they are maintained.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WAYNE CAI whose telephone number is (571)272-7798. The examiner can normally be reached on Monday-Thursday from 8:00 a.m. to 6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Wayne Cai/
Examiner, Art Unit 2617